

MINNEQUA SPRING,

Bradford Co., Pa.

ANALYSIS OF THE WATER,

BY

CHARLES M. CRESSON, M.D.,

Philadelphia.

THERAPEUTICAL EFFECTS,

BY

F. HINKLE, M.D.,

Columbia, Pa.

PHILADELPHIA:

WILLIAM MANN, PRINTER,

529 Market Street.

1875.

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417 WALNUT STREET,

PHILADELPHIA, May 7, 1875.

F. HINKLE, M.D.,

Columbia, Pa.

DEAR SIR:—The analysis of water from Minnequa Spring, Bradford County, Pa., has resulted as follows:

ANALYSIS OF WATER FROM

MINNEQUA SPRING.

	Grains in one U. S. Gallon.
Total Solid Contents in one U. S. Gallon, . . .	7.652
Calcium,	0.994
Magnesium,	0.207
Sodium,	0.722
Lithium,	Trace.
Aluminium,	0.127
Iron,	Trace.
Manganese,	0.266
Chlorine,	0.140
Silica,	0.700
Zinc,	0.028
Carbonic Acid,	2.053
Boracic Acid,	2.132
Oxygen (with Silicates),	0.138
Loss,	0.145

Temperature of Spring, 47° Fahr.

Amount of Sample, 25 U. S. G.

* *

The active ingredients are the Boracic acid and the salts of Manganese and Zinc. These metals are of unusual occurrence. One of them, Manganese, is found in the following celebrated springs :

Ems, Nassau.

Spa, Belgium.

Carlsbad, Bohemia.

Pyrmont, Waldeck.

Wiesbaden, Nassau.

Garonne, Toulouse.

Boracic acid is also found in the water at the Spa, Belgium.

I append a table of the analysis of these waters, for the purpose of comparison with that from Minnequa.

It is a well-known fact that many remedial agents act most favorably when largely diluted. The springs at Vichy, for instance, contain one grain of Arsenic in seventeen gallons of the water and are wonderfully efficient in cases requiring the use of that metal.

Nature sometimes unites the inorganic constituents of spring waters in a peculiar manner, so that artificial mineral waters containing the same elements fail to produce the particular results derived from the water from springs. Friedrichshall is a well-known example of such a water with a peculiar constitution.

In addition to the benefits derived from drinking medicated waters, the effects of change of air, diet, habits, etc., consequent upon a visit to the springs, aid materially in the cure, especially of chronic disease.

Minnequa is situated in one of the great mountain ranges, at a considerable elevation above tide-water, and is free from the local detractions of our great watering-places.

The rolling country is conducive to healthy exercise, and the surroundings are pleasant to the eye, and the invalid can enjoy the benefits of light and air in the groves without much expenditure of muscular energy.

The "ailments" for which this water is best adapted are such as require tonics, anti-spasmodics and alteratives. Scrof-

ula, Epilepsy, Chorea, Chlorosis, Neuralgia, and Rheumatic affections will chiefly be benefited.

For anæmic patients, with whom the preparations of Iron have failed or act but feebly, the use of Minnequa water is peculiarly suited, at first in conjunction with the Carbonate or Iodide of Iron, and finally alone.

This treatment will usually improve the appetite, increase the pulse force and induce healthy secretions.

As active secretion (especially of the liver) is produced by the salts of Manganese, it will be prudent to use this water under restrictions, and as soon as its constitutional effects appear, to gradually diminish the amount taken, ceasing its use when healthy secretion is established.

In many cases it will be prudent to *warm* the water (as is usually done with Friedrichshall) before permitting patients to drink any large volume of it.

To the medical profession, the presence of Borate of Soda will suggest the necessity for precaution in the use of this water, with certain classes of patients, on account of its action as an emmenagogue, and also of its suitability for use in nervous, gastric or kidney troubles, or whenever the alkalies are indicated.

Minnequa possesses an advantage over all of the foreign waters enumerated, inasmuch as it admits of the use of the curative agents without the necessity of taking into the system large amounts of the useless, if not hurtful, salts found in each of them.

Respectfully yours,

CHARLES M. CRESSON, M. D.

TABLE OF SPRING WATERS.

Grains in one U. S. Gallon.

LOCALITY.	Total Solid Contents.		Calcium.		Barium.		Strontium.		Magnesium.		Sodium.		Potassium.		Lithium.		Aluminium.		Iron.		Manganese.		Carbonic Acid.		Sulphuric Acid.		Fluorine.		Chlorine.		Bromine.		Boric Acid.		Silicic Acid.		Zinc.	
	Ca	Ba	Sr	Mg	Na	K	Li	Al	Fe	Mn	CO ₃	SO ₄	Fl	Cl	Br	BO ₃	SiO ₂	Zn																				
Ems, Nassau, . .	162.14	3.46	0.01	0.03	1.70	65.46	2.02	Trace	0.09	0.01	55.50	2.25	0.01	28.39	. .	. .	3.14	. .																		
Spa, Belgium, . .	32.82	2.99	. .	2.43	3.84	0.26	. .	0.06	1.35	0.18	15.45	0.52	. .	2.06	. .	3.52																				
Carlsbad, Bohemia, 318 06	7.28	. .	0.29	2.93	104 53	. .	. .	Trace	0.99	0.23	59.96	101.97	0.87	36.74	. .	. .	4.38	. .																
Pyrmont, Waldeck, 156.53	34.29	. .	0.06	6.94	5.27	0.11	0.11	Trace	1.76	0.16	31.17	66.35	. .	6.31	. .	. .	3.81	. .																		
Wiesbaden, Nassau, 481.67	21.17	. .	. .	3.20	156.67	4.62	. .	Trace	0.15	0.17	15.24	3.71	. .	273.27	0.17	. .	3.52	. .																		
Garonne, Toulouse, 7.96	1.50	. .	. .	0.05	0.33	0.19	. .	. .	0.18	0.17	2.61	0.45	. .	0.11	. .	. .	2.33	. .														
MINNEQUA,*	7.65	0.99	None	0.20	0.72	None	Trace	0.12	Trace	0.26	2.05	None.	. .	0.14	None	2.13	0.70	0.02																				

* Analysis by C. M. CRESSON, M.D., 417 Walnut St., Philada. (Minnequa Springs, in Bradford Co., Penn'a.

From an examination of the above analysis, and the result of my observations of the effects of the use of Minnequa Water, upon many patients under my care, I have no hesitation in recommending the use of the water to those suffering with Chorea, Epilepsy, Rheumatism, Neuralgia, Dyspepsia, Irritation of the Kidneys and Bladder, Anæmia, and particularly that consequent upon Scrofula, Phthisis, Cancer and Syphilitic Cachexy.

For the purpose of enabling persons, not under the care of any regular practitioner of medicine, to judge of the cause of ill-health and of the proper course to be pursued to recover health, I will describe the symptoms of several of the diseases enumerated to which the use of Minnequa Water is particularly adapted.

EPILEPSY.

Commonly known as Falling Sickness. A convulsive disease, paroxysmal, usually preceded by gloomy feelings, moroseness and irritability; failure of memory, confusion of thought, headache and vertigo are common accompaniments; also, dimness of sight, noises in the ears, nausea and vomiting. The patient usually falls as if stricken down, frequently uttering a startling cry. The fall is frequently preceded by certain strange sensations, such as the pouring of a stream of cold water, or a feeling of heat; pain upon the body or extremities, which sensation travels toward the brain. When the sensation reaches the brain, consciousness ceases, the pulse becomes feeble and irregular, and frothing at the mouth takes place. The duration of the paroxysm varies from a few moments to many hours.

During the paroxysm the only measures to be taken are, to loosen the clothing from around the neck and chest, place a piece of soft wood or other smooth object between the teeth to prevent mutilation of the tongue, and lay the patient in an easy position so as to insure free breathing.

When the disease is not by inheritance, or the result of mechanical injury, great relief and many cures are effected by the use of tonics and antispasmodics.

The most common cause of Epilepsy is Anæmia, and it is

of primary importance that this be corrected. The preparations of Zinc have been used with noted success.

The water of Minnequa Spring contains a sufficient amount of Zinc, and if, in addition to the use of the water, Valerian and Dulcamara be exhibited, cures may be expected in many cases; when the predisposing cause is induration or enlargement of any organ, causing pressure upon an important nerve, Manganese, also found in the water, will be properly indicated.

ANÆMIA.

By Anæmia is understood a morbid deficiency or poverty of the blood. There are two forms of this disease, one appearing suddenly, and the other gradually. The former may be called *acute*, the latter *chronic* Anæmia.

Acute Anæmia consists in a sudden diminution of the mass of blood, produced by copious bleeding or profuse hemorrhage. The whole volume of the blood is lessened, while its ingredients bear to each other the normal proportion.

Chronic Anæmia is a not unfrequent attendant upon other recognized diseases, which have the effect of impairing the processes of digestion, and sanguification, or draining the system of its blood; but, it also appears to have occasionally an independent existence. One of its most ordinary forms is that usually designated by the name of *chlorosis* or *green sickness*.

Some authors consider this is a distinct affection from true Anæmia; but even these place its characteristic feature in poverty of the blood.

The fact that it generally occurs in girls or young unmarried women, would only prove that there are circumstances in their situation peculiarly operative in the production of the disease, and not that there is anything peculiar in the disease itself. Nor is Chlorosis confined to girls, or even the female sex; it is sometimes met with in married women, and in males of delicate constitution, especially about the age of puberty.

There is commonly universal paleness of the skin; the lips, tongue and mucous surfaces in general are also strikingly pale; there is extreme whiteness of the conjunctiva, and the

whole surface of the body appears bloodless. Sometimes the face is yellowish or sallow, and has a waxen aspect. With this change of color there is often a puffiness of the face, especially of the eyelids; the skin seems translucent; the patient is feeble, and cannot bear much exertion, to which also he is usually indisposed; the circulation is irregular, but almost always weak; it is almost always greatly quickened by bodily exercise or mental emotion. Palpitation of the heart is a very common symptom. It is sometimes continuous, sometimes irregularly intermittent, and may be induced by the slightest causes, mental or physical. Violent exertion often throws the heart into the most tumultuous action. Vertigo, dizziness, and a feeling of faintness are very common; and spasmodic movements of the muscles, sometimes amounting to convulsions, are not unfrequent, especially in females. Violent and obstinate neuralgic pains in the head, side, breast, or other part of the body, are also frequent attendants upon the disease.

The bile is frequently scanty; and costiveness, with unhealthy alvine evacuations, and a dyspeptic state of stomach, are extremely common symptoms.

In that form of Anæmia commonly called *Chlorosis*, the subjects are usually girls between the periods of puberty and maturity. The complaint is in most cases very gradual in its advance, and is often from the beginning attended with deranged digestion and costiveness. The appetite is irregular, sometimes defective, sometimes excessive, and occasionally morbid in its preferences for particular substances. The breath is often offensive. Listlessness, indisposition to exertion, and an expression of sadness or dejection are not unfrequent features of the disease in its earlier stage. The complexion gradually fades, until at length it becomes of a pale, sickly hue, with a yellowish or greenish tinge, which has given rise to the name of the complaint.

The nervous symptoms are peculiarly prominent, and the patient is not unfrequently afflicted with all the harassing train of hysterical disorders.

Moderate exercise in the open air, and especially on horseback, should be encouraged; the patient should sleep in well-

ventilated apartments; and the ill effects of irregularities of temperature should be prevented by wearing flannel next the skin, and the use of a nutritious and digestible diet, such as that recommended in cases of dyspepsia.

The medicines best adapted to the disease are tonics, and especially the chalybeates, which, besides an invigorating influence over the process of digestion and the vital processes generally, have a peculiar power of increasing the richness and redness of the blood. Hence, the preparations of Iron, Manganese, and Zinc, have been long considered almost as sovereign remedies in Chlorosis.

But when the digestion is feeble, they may be advantageously combined with the simple bitters. It will often be found useful, in order to hasten or confirm convalescence, or even as a remedy in obstinate cases, to send the patient upon excursions to springs at a distance from home, so as to combine with the medicinal effect of the chalybeates and tonics the happy influences of exercise, pure air, novelty of scene, and the enjoyments of agreeable society. Unless complicated with serious organic lesions, the disease may generally be cured, or very materially relieved, by the means above detailed, in a period of time varying from two to six weeks.

CHOREA—ST. VITUS' DANCE.

Chorea is characterized by involuntary contractions of the muscles, without loss of consciousness and without a complete loss of the power of the will.

“It generally comes on gradually, and is often preceded by irregular appetite, constipation, swollen abdomen, etc., which are sometimes also accompanied with depression of spirits, or other signs of nervous disorder. The first unusual movements are often noticed in some one part of the body, as the face, the shoulders, or the hands; the patient making ludicrous grimaces, or shrugging the shoulders, or incessantly working with the fingers. Irregular muscular action increases, and at length the whole body becomes more or less involved.”

Chorea is sometimes attended with headache. The bowels are generally constipated, and the discharges often unhealthy.

The appetite is in some instances natural, in others morbidly craving, deficient or capricious. There is no fever.

Neuralgic affections, moreover, are not uncommon in patients who have been affected with Chorea; and there appears to be some connection between the latter complaint and rheumatism of the muscles, pericardium and spine.

An unsteady, excitable state of the nervous system predisposes to Chorea. Such a state is apt to attend a feeble condition of the general health; and hence the disease is frequently observed in individuals with disordered digestion, and defective nutrition.

Sex has a powerful influence. Females are much more liable to the disease than males. From a comparison of numerous statistical reports on this point, it results that the proportion of females is between two-thirds and three-quarters of the whole number.

Constipation should be properly corrected by purgative medicines.

Chlorosis or Anæmia demand the use of the Salts of *Iron* and *Manganese*.

To give strength and equability to the nervous actions, tonics and antispasmodics or nervous stimulants are required. Sulphate of Quinia is sometimes very efficient, but the mineral tonics are generally preferred. The preparations of *Iron*, *Manganese* and of *Zinc* are, on the whole, the best and safest.

To maintain the mind in a cheerful state, and the temper free from causes of excitement, are points of some importance in the treatment of Chorea. The diet should be accommodated to the state of the system, and in general the patient may be permitted to use ordinary food, taking care to avoid indigestible and acescent substances. The habitual use of tea and coffee should be abandoned.

RHEUMATISM.

Rheumatism is a constitutional affection, attended with a peculiar irritation or inflammation, to which all the parts of the system are liable.

Rheumatism may be divided according to its seat or its grade of excitement; as, *Acute*, in which violent local inflam-

mation is attended with considerable constitutional disturbance or fever; or, *Chronic*, which is characterized by long duration and a low grade of inflammatory action; or, *Nervous*, in which there is neither inflammation nor fever, the disease consisting exclusively in irritation, and that directed especially to the nervous tissue.

A variety of Acute Rheumatism, denominated *Bilious*, has sometimes been noticed, especially in miasmatic districts, and is usually coincident with an attack of Intermittent or Remittent Fever, and exhibits, along with its own peculiar phenomena, the bilious symptoms and character of those affections.

Almost the only known exciting cause of Acute Rheumatism is cold. The cold operates most powerfully after free perspiration. Sleeping on damp sheets, or upon the damp ground, wearing wet clothes, exposure to cold rains, without subsequent change of dress, and sitting in a damp, cold room, are examples of the kind of exposure which is apt to be followed by the disease.

But, something more is requisite than exposure to cold. There must also be a peculiar condition of the system predisposing to this form of disease. There must be a rheumatic diathesis.

Chronic Rheumatism may exist in the fibrous, synovial, or muscular tissues, but is most frequent in the joints. It may occur either as an original affection, or as the consequence of an acute or subacute attack. It is sometimes limited to a single part, sometimes extended to several, and may be either fixed or movable. Usually, however, it is more apt to be fixed firmly in its original seat.

Nervous Rheumatism very often assumes the form of irritation, without the least sign of inflammatory action. It may be directed especially to the nervous system, evincing itself by pains or other disordered sensations, and by irregularities of the motive power; or, it may affect any other portion of the body, or any one of the organs, producing derangement of function in the parts or organ affected.

The patient may be attacked with a neuralgic pain in the face, dyspeptic sensations in the stomach, or colicky pains in the bowels, which will instantly cease upon the occurrence of

an attack of Subacute Rheumatism in one of the joints or muscles, and return upon the retrocession of the latter affection.

The exciting causes of this variety of Rheumatism are the same as of the others, but there is a different condition of system in the individuals subject to it, which determines this rather than the inflammatory forms. A predominance of the nervous temperament, sedentary habits, abstemious modes of living and generally whatever tends to depress the powers of the system at large, may be considered as favoring the production of Nervous Rheumatism. Hence, it is most frequent in females, students, and professional men, especially those who live temperately.

An appropriate treatment in many cases of Rheumatism is the administration of alkaline drinks, largely diluted. The large amount of Borate of Soda contained in Minnequa water, makes the use of that water particularly adapted to the relief of rheumatic and neuralgic cases requiring the use of alkalies especially, as the Borate of Soda possesses all of the properties of the alkalies without producing any of the disagreeable sequelæ so often following the use of the carbonates of Soda or Potash. The use of a moderate amount of Colchicum may also be combined with that of the water, occasionally alternating with the Iodide of Potassium.

As depraved and deficient secretion of bile is a common accompaniment of Rheumatism, the use of Salts of Manganese, also contained in the water from Minnequa Springs, are especially indicated.

NEURALGIA.

Pain without inflammation or other disorder except that of the nerve involved, pain of a purely nervous character. It may be extended so as to embrace all cases of pain not spasmodic, which cannot be traced directly to vascular congestion, inflammation, or other organic lesion.

The pain is generally acute, shooting or darting; with tenderness of the part upon pressure.

Sometimes the paroxysm of pain is preceded by certain warnings, such as epigastric distress, nausea, chilliness or

shivering, and a vague feeling of general discomfort. More frequently it approaches without any such premonition, either beginning moderately with a sense of aching, tingling, burning, itching, etc., and gradually increasing till it becomes almost insupportable; or darting at once through the part with its utmost intensity, as it were in electric flashes, which make the muscles even of a strong man quiver as they pass. The paroxysm may consist of a continuous pain, varying in degree, or of a succession of violent twinges, with comparative ease in the intervals.

Neuralgia often originates in diseases of distant organs. The stomach, bowels, liver, urinary organs and genital apparatus, and especially the uterus, are very apt thus to make their disorder known. Acid, acrid secretions, or some offending article of diet or drink in the stomach, not unfrequently occasions severe neuralgic pains in distant parts of the body. Pain in the extremities and external parts of the trunk are frequently connected with organic disease of the liver and kidneys.

The correction of functional disease of the liver has often led to the relief of such affections. The uterus, in disease, is notorious as the source of external pains. The condition of the system has also been mentioned as contributing to the production of neuralgic pains.

Another morbid state of system which strongly disposes to neuralgic attacks is debility. The affection is a very common attendant upon convalescence from long-continued and exhausting diseases, especially from the idiopathic fevers. The anæmic condition is very favorable to it. Chlorotic females are extremely subject to neuralgic pains.

Of the exciting causes, the most frequent is probably cold, fatigue, strong mental emotion, excesses of the table, intemperate drinking, the abuse of tea, coffee, and tobacco. Retrocession of Gout and Rheumatism, and the sudden removal of cutaneous eruptions are exciting causes. So is frequently a wound or bruise. A vast diversity of remedies has been used in the treatment of Neuralgia, and most of them with some apparent success. Being a purely nervous affection, it might be expected to be influenced by means calculated to make an

impression on the mind. Hence the occasional efficacy of metallic tractors, of magnetized rings, of homœopathic pills, and of numberless scarcely less inert applications, in the relief of Neuralgia.

Dyspepsia, if existing, must be counteracted by the requisite measures and great vigilance must be exercised in order to prevent injurious impressions upon the stomach. Acid in the stomach and flatulence should be corrected; acrid accumulations removed by cathartics or otherwise; and any article of diet that may prove a cause of offense should be prohibited.

In like manner, disease of the kidneys and urinary passages and of the generative organs should be cared for, and Amenorrhœa especially should be removed by the requisite means.

Various metallic tonics have had some reputation in the treatment of Neuralgia. Among them may be mentioned Nitrate of Silver, the Salts of Copper, and the Sulphate and Oxide of Zinc.

The Borate of Soda and Carbonate of Zinc found in Minniqua water will act as efficient aids in the treatment of neuralgic affections.

DYSPEPSIA

Is a disease of the stomach arising from various causes, irritant or nervous, depressing the action of the stomach and weakening its powers.

The symptoms vary exceedingly in different cases and as the disease generally progresses gradually it is seldom treated until it is firmly established.

Appetite is more or less impaired, frequently wanting; or it may be strong or perverted with a craving for improper articles of food.

Uneasiness and gnawing or burning pains in the stomach, with flatulence, are usual accompaniments.

The patient *feels* his stomach all the time, though not always with pain. Eructations of wind and regurgitation into the mouth of food or chyme, or of a sour, bitter, acrid, oily or offensive liquid are common symptoms. Some patients are

affected with Waterbrash, and some with occasional or habitual vomiting.

The bowels are almost always constipated, unless in cases complicated with chronic Enteritis, or excessive secretion of bile. The hepatic function is also frequently deranged. The secretion of bile is very often diminished, giving rise to light, clay-colored, whitish, or hard and scanty stools. Sometimes it is perverted, giving a dark or black color to the passages; and more rarely it is too abundant, producing vomiting of bile, or Bilious Diarrhœa.

The *urine* is variously affected, sometimes scanty and high-colored, depositing a lateritious or whitish precipitate; sometimes copious, limpid, and almost colorless. The *pulse* is in some cases quite natural, in others more or less disordered, being either too slow or too frequent, or altogether irregular.

The most prolific source of Dyspepsia is probably the combined influence of sedentary habits and errors of diet.

In the cure of Dyspepsia it is necessary to use such treatment as shall restore healthy action to the liver, enforce proper exercise and suitable selection of food and manner of taking it.

The water from Minnequa Springs is a powerful cholagogue and the location affords a chance of securing the proper kinds of exercise.

For the feeble, the walks in the grove with gentle ascents, and to the more robust the mountain country furnishes proper opportunities for riding on horseback, or over rough roads. Such exercise, however, should not be taken either directly before or after a hearty meal.

If, in addition, prudence in eating and drinking be observed, such as the avoidance of pastry, fat meats, veal, pork or fish, and coffee or alcoholic stimulants, and rest be taken regularly and fully in well-ventilated apartments, there is no doubt but that a majority of dyspeptics will be much relieved and many permanently cured.

The therapeutical effects and general application of the Salts of Manganese and Zinc, and of Borate of Soda, are well expressed in the U. S. Dispensatory and other medical authorities, from which the following extracts are taken:—

MANGANESE.

Sulphate of Manganese produces an extraordinary secretion of bile, and acts as an alterative. Iodide and Carbonate of Manganese are particularly useful in the anæmia attendant on Scrofula, Phthisis and Cancer and in Syphilitic Cachexy. Given in conjunction with Cinchona, it rapidly removes the enlargement of the spleen often following protracted fevers.

Permanganate of Potash has been used successfully by Mr. Sampson, of London, in Diabetes. It has been used externally and has proved to be a valuable caustic and deodorizer. As an application to foul ulcers which require an escharotic, it acts in this double capacity. It is used as an application to cancers and other foul ulcers. Ferro-Manganic preparations are peculiarly suited to the treatment of anæmic cases in which iron has failed, or acts very slowly in Chlorosis.

ZINC.

Chloride of Zinc has been given internally as an alterative and antispasmodic in Scrofula, Epilepsy, Chorea and combined with Hydrocyanic Acid in Facial Neuralgia.

Oxide of Zinc is tonic and antispasmodic. It has been given in Chorea, Epilepsy, Hooping-Cough, Spasm of the stomach dependent on Dyspepsia and other similar affections.

Sulphate of Zinc. This salt is tonic and astringent. As a tonic it is supposed to be well suited to cases of debility, attended with irritation, being less heating than Sulphate of Iron. In Dyspepsia it has been used with advantage in very minute doses. In the night-sweats of Consumption it acts with singular efficacy, combined with extract of Hyoscyamus. In obstinate intermittents it is a valuable resource, and may be given alone, or conjoined with Cinchona or Sulphate of Quinia; but it is in spasmodic diseases, such as Epilepsy, Chorea, Pertussis, etc., that it has been principally employed.

Valerianate of Zinc upon trial was found to possess antispasmodic properties. By some of the Italian physicians it has been extolled as a remedy in neuralgic affections. Dr. Mamias, of Venice, employed it with advantage in anomalous

nervous affections, attended with palpitation of the heart, constriction of the throat, and pain in the head. Dr. Francis De Vay, of Lyons, found it useful in Epilepsy and in the nervous affections which accompany Chlorosis.

SODÆ BORAS.

Borax is a mild refrigerant and diuretic. It is supposed also to exercise a specific influence over the uterus, promoting menstruation, facilitating parturition and favoring the expulsion of the placenta.

Dr. Daniel Stahl, of Indiana, has found it useful in Dysmenorrhœa occurring in sanguineous constitutions, venesection being premised.

Virey deemed it aphrodisiac; and, according to Dr. J. C. Hubbard, it is eminently so when used in the form of enema. Binswanger considers Borax as the best remedy that can be used in nephritic and calculous complaints dependent on an excess of uric acid. It probably acts in such cases as an alkali, the soda of the salt neutralizing the uric acid occurring in the urinary passages, and the boracic acid being set free. The dose is from thirty to forty grains. In Infantile Diarrhœa, unattended by lesions of the intestinal mucous membrane, M. Bouehut has found Borax peculiarly efficacious.

Externally, the solution of Borax is used as a wash in scaly eruptions.

The salt is very much used as a detergent in aphthous affections of the mouth in children.

Owing to its therapeutical relations, Borax may be classed with the alkalies, and especially with soda. From its effects when applied externally, it may be inferred to possess a local sedative influence upon morbid action in the nervous and vascular systems; which, however, it exerts, like many other agents, by previously stimulating the tissues to which it is applied. When taken internally, it does not disturb the digestion as much as the alkalies do.

It is said to have a tendency to dissolve the blood and augment the secretions without exciting the circulation. According to Wibmer, the emmenagogue virtues of Borax

were known to the ancients, and, as will be seen in the sequel, modern observation is not wholly at variance with their belief. Vogt speaks of its being particularly celebrated for these qualities, and not only for promoting menstruation, but also for moderating the cramplike pains which often attend this process when it is irregular; for regulating the uterine contractions during labor, and for strengthening feeble pains. Some writers have not hesitated to ascribe such virtues to Borax upon no other ground than because the administration of this medicine, in conjunction with Ergot, was followed by uterine contractions. According to Vogt, narcotic powers have also been ascribed to this medicine. Borax has been much employed as a cosmetic.

It is asserted to have the power of removing Freckles, Liver Marks, and other accidental Discolorations of the Skin. The discolored skin should be bathed three or four times a day with the solution, which should be allowed to remain upon it until it is dry. *Chilblains* are said to be relieved by a Salve containing two drachms of Borax to an ounce of Cold Cream. A wash, composed of one drachm of Borax in two ounces of Distilled Vinegar, has been recommended by Abererombie and by Christison as an excellent lotion for *Ringworm of the Scalp*. It has also, according to Pereira, been found serviceable in Pityriasis Versicolor; and Ritcher used a solution of it with advantage, for removing *Opacities of the Cornea*. It is often employed in ill-conditioned ulcers of the skin and mucous membranes.

Although Borax has no power of controlling mercurial *salivation*, it is nevertheless a most excellent agent for healing the ulcers which this state induces, and for strengthening the spongy gums.

One of the most ordinary uses of Borax is to remove the aphthæ which affect the month, fauces, and anus of nursing children, and which appears to be caused by an undue generation of acid in the primæ viæ.

Ritcher regards it as indubitable that Borax possesses a power of stimulating the *inert uterus*, exciting its secretion and promoting its contractions during labor, and consequently that it deserves to be ranked with *emmenagogues*. Dr. Stahl,

of Vincennes, Ind., highly extols the efficacy of Borax in the treatment of *Dysmenorrhæa*, particularly in persons of a sanguine constitution.

Dr. Golding Bird says, "In women this drug cannot be used with impunity, as it certainly exerts a stimulant action on the uterus, and I have seen it in two instances produce abortion. Borax has also been used as a lithontriptic. It renders the urine alkaline and is said to dissolve Lithic Acid, Gravel, and Calculi."

A perusal of the therapeutical applications and properties of the Salts of Manganese, Zinc, and Borate of Soda, as above enumerated, shows the great variety of diseases to which the Minnequa water is suited; and where the use of it is combined with other remedies properly exhibited a great number of cures may be expected.

The analyses given, of which the results are above shown, were made at my suggestion, first, to ascertain the cause of many cures that I have witnessed, and also that medical practitioners might know what were the active curative agents found in the Minnequa Spring and thus be enabled to select from among their patients such as will be benefited by a visit to this resort.

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